REMARKS

Claims 1 - 12 and 34 - 50 are pending. Applicants note with appreciation that claims 9, 10 and 42 are allowed. New claims 45 - 50 depend from the allowed claims and provide further patentably distinct features of the present inventive methods.

Applicants request reconsideration of the rejected claims in light of the following amendments and remarks. Applicants request withdrawal of the outstanding objections and rejections, and allowance of the claims.

I. Claims 34 – 41 are fully supported by the specification and drawings.

In the outstanding office action, the Examiner rejected claims 34 - 41 and 43 - 44 under §35 U.S.C. § 112(a), first paragraph, stating that the limitation "without the use of heat" does not appear to have support in the original disclosure.

In rejecting a claim under the first paragraph of 35 U.S.C. 112 for lack of adequate descriptive support, it is incumbent upon the examiner to establish that the originally-filed disclosure would not have reasonably conveyed to one having ordinary skill in the art that an appellant had possession of the now claimed subject matter. MPEP §2173.05(i) citing *Ex parte Parks*, 30 USPQ2d 1234 (Bd. Appl. & Inter, 1993), citing *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993).

Further, an adequate description under the first paragraph of 35 U.S.C. 112 does not require *literal* support for the claimed invention. *Ex parte Parks, supra*, citing *In re Herschler*, 591 F.2d 693, 200 USPQ 711 (CCPA 1979); *In re Edwards*, 568 F.2d 1349, 196 USPQ 465 (CCPA 1978; *In re Werthein*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). Rather, it is sufficient if the originally-filed disclosure would have conveyed to one having ordinary skill in the art that an appellant had possession of the concept of what is claimed. *Ex parte Parks, supra*, citing *In re Anderson*, 471 F.2d 1237, 176 USPQ 331 (CCPA 1973).

The Examiner contends that the rejected claims lack adequate descriptive support because "the original disclosure does not explicitly exclude the use of

heat". Clearly, the observation of a lack of literal support does not, in and of itself, establish a *prima facie* case for lack of adequate descriptive support under the first paragraph of 35 U.S.C. 112. *Ex parte Parks, supra*, citing *In re Herschler, supra; In re Edwards, supra; In re Wertheim, supra.*

In the instant application,

> "...it cannot be said that the originally-filed disclosure would not have conveyed to one having ordinary skill in the art that the [inventors] had possession of the concept ..."

that the manufacturing of a composite sheet should be carried out with in the absence of heat. (See *Ex parte Parks, supra* at 1236).

Throughout the discussion in the specification, which would seem to "cry out" for heat if it were intended to be used, no mention is made of heat. (See *Ex parte Parks, supra* at 1236).

Moreover, one having ordinary skill in the art would have recognized that the heat would not be applied during the vacuum step for at least the following reasons:

First, the drawings, in Figure 2, do not show any means for heating the resin, and as such, it is understood by those skilled in the art that there is no heat applied.

Second, the specification teaches, at pages 3 – 4, that the resin is liquid and is a quick acting material that sets up within about 20 minutes. Those skilled in the art would recognize that such "quick acting" description refers to materials that do not have any heat applied thereto.

Third, the specification, at page 10, line 18, discloses an embodiment of a polyester /epoxy blend resin that flows into holes. Those skilled in the art would recognize that such material is flowable at ambient temperatures.

Fourth, the specification, at page 9, line 16, describes an embodiment where the reinforcement layer hardens. Those skilled in the art would recognize that such material is hardened at ambient temperatures since there is no discussion of heat being applied.

Fifth, the specification, at page 6, line 11, does describe using heat when necessary for a FRP which is "hot pressed." Those skilled in the art would

recognize that when a "hot pressing" step is described as one embodiment, then the other steps are carried out at ambient temperatures.

Finally, the specification fully and adequately mentions heat when necessary to distinguish from ambient temperatures. In particular, the specification, at page 9, line 27 through page 10, line 13, describes the effects of detrimental heat on the composite sheet.

Thus, it cannot be said that the originally-filed disclosure would not have conveyed to one having ordinary skill in the art the concept of evacuating substantially all air trapped between the reinforcement layer and the reinforcement panel through the perforations without the use of heat, thereby bonding the reinforcement layer to the reinforcement panel. See *In re Anderson, supra.*

Therefore, at least for these reasons the specification fully and adequately describes the present invention as set forth in the claims. The invention, as described in the specification and claims 34 - 44, is conveyed in such a way as to reasonably convey to one skilled in the relevant art that the inventors at the time the application was filed, had possession of the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of record, and allowance of all claims.

II. Claims 1, 3, 34 and 38 are novel.

In the outstanding office action, the Examiner rejected claims 1, 3, 34 and 38 under §35 U.S.C. § 102(b) as being anticipated by the Oka US Patent No. 5,446,250 reference (hereinafter Oka '250). Applicants contend that all the claims are patentable over these references, and request withdrawal of the rejection under 35 U.S.C. §102.

Independent claims 1 and 34 recite a method of manufacturing a composite sheet consisting essentially of the enumerated steps further described therein. Such amendment excludes other elements and other steps.

The claims 1 and 34 have been amended to recite that, in the present inventive method, the composite sheet consisting essentially of: three layers: i) an

outer coat 16; ii) a reinforcement layer 28; and iii) a perforated reinforcement panel 29. The claims 3 and 38 have been amended to further recite that the composite sheet consists essentially of four layers: i) an outer coat 16; ii) a reinforcement layer 28; iii) a perforated reinforcement panel 29, and iv) a pervious polymer sheet 62.

The present inventive method defined in claims 1, 3, 34 and 38 consists essentially of providing a perforated panel where resin is forced into the perforations formed in the reinforcement panel, thereby bonding the reinforcement layer to the reinforcement panel.

In contrast, the Oka '250 reference describes a dampening material having: i) a gel coating 15; ii) a fiberglass base plate layer 12; iii) a cushioning material 13; and iv) a restraining layer 14. The Oka '250 reference thus requires a fourth layer, the restraining layer 14 which is a fiberglass reinforced plastic layer. The fourth, and restraining, layer is not pervious and could not be used in the present invention where the top layer must be pervious in order to be able to force the resin into the perforations in the reinforcement panel. The present invention does not provide any restraining step or restraining layer. Therefore, the Oka 250 reference actually teaches away from the present inventive method by requiring such restraining of the Oka structure. As such, the present inventive method set forth in the claims 1, 3, 34 and 38 are not anticipated by the Oka '250 reference and the Examiner is respectfully requested to withdraw this rejection.

III. Claims 2, 4- 8, 11 -12 and 35 - 44 are unobvious and patentably distinct.

In the outstanding office action, the Examiner rejected claims 2 and 35 - 37 under 35 U.S.C. §103 as being unpatentable over the Oka '250 reference in view of the Weinstein et al. U.S. Patent No. 4,082,882 (hereinafter, "Weinstein") reference. Applicants contend that all the claims are patentable over these references, and request withdrawal of the rejection under 35 U.S.C. §103.

There is no motivation to modify the Oka '250 reference with the vacuum step of Weinstein to meet the claimed invention. The Oka '250 reference places a non-pervious restraining layer of the perforated cushioning layer. The Weinstein

reference describes a process where a ribbed roller is used to force the resin through a fiberglass material having no holes therein. There is no teaching or suggestion to form holes in a reinforcement panel and to force resin into such holes without the application of external heat. Neither the Oka '250 reference nor the Weinstein reference, taken alone or in combination, teach or suggest the use of a perforated panel where a vacuum pressure is used to force a resin into perforations formed in a reinforcement panel.

Further, in the outstanding office action, the Examiner rejected claims 4-6, 8, 39, 40 and 44 under 35 U.S.C. §103 as being unpatentable over the Oka '250 reference in view of JP abstract 62-064527 (hereinafter "JP '527 abstract").

The claims 4 - 6, 8, 39, 40 and 44 depend from the amended independent claims. Applicants contend that all the claims are patentable over these references, and request withdrawal of the rejection under 35 U.S.C. §103.

The Examiner admits that the Oka '250 reference does not teach or suggest tapered holes.

The JP '527 abstract teaches the use of two sequential steps that are needed to form the JP '527 material: first, heat is applied to the materials, and, second, ultrasonic vibration is used to push a melted material into holes in an adjacent material. There is no teaching or suggestion to form holes in a reinforcement panel and to force resin into such holes without the application of external heat. The JP '527 fails to supply any of the deficiencies the JP '216 abstract and the Oka '250 reference. Rather, the JP '527 reference teaches away from the present invention by requiring extra steps or heat and ultrasound. None of the cited references teaches or suggests the use of a perforated panel where a vacuum pressure is used to impregnate adjacent layers in a laminated structure without the use of applied heat.

Still further, in the outstanding office action, the Examiner rejected: claim 7 under 35 U.S.C. §103 as being unpatentable over the Oka '250 reference in view of the Tellman et al. US Patent No. 4,655,859 reference (hereinafter "Tellman '859");

and claim 41 under 35 U.S.C. §103 as being unpatentable over the Oka '250 reference in view of the JP '527 abstract and further in view of the Tellman '859 reference.

The claims 7 and 41 depend from independent claims 1 and 34, respectively, which were fully discussed above. Applicants contend that all the claims are patentable over these references, and request withdrawal of the rejection under 35 U.S.C. §103.

The Tellman '859 reference teaches the scoring of veneered products with longitudinally extending blades in order to facilitate the drying of the product. One skilled in the art would not look to the Tellman '859 reference in order to form perforations through which a resin could be forced. There is nothing in the Tellman '859 reference which supplies the deficiencies of the earlier discussed references. There is no teaching or suggestion to form holes in a reinforcement panel and to force resin into such holes without the application of external heat. Rather, the Tellman '859 reference fails to supply any of the deficiencies of the Oka '250 reference or the JP '527 abstract. None of the cited references teaches or suggests the use of a perforated panel where a vacuum pressure is used to impregnate adjacent layers in a laminated structure without the use of applied heat.

Finally, in the outstanding office action, the Examiner rejected claims 11 - 12 and 43 under 35 U.S.C. §103 as being unpatentable over the Oka '250 reference in view the Sharp US Patent No. 5,054,645 reference (hereinafter "Sharp '645").

The claims 11 - 12 depend from independent claim 1 and claim 43 depends from independent claim 34, which independent claims were fully discussed above. Applicants contend that all the claims are patentable over these references, and request withdrawal of the rejection under 35 U.S.C. §103.

The Sharp reference teaches the use of resinous columns formed in a multi-layer material for underground tank. There is no teaching or suggestion to form holes in a reinforcement panel and to force resin into such holes without the

application of external heat. Therefore, the Sharp reference fails to supply any of the deficiencies the Oka '250 reference, taken either alone, or in combination.

Therefore, at least for these reasons the cited reference fails to teach or suggest the invention defined in the claims. Accordingly, Applicants request withdrawal of the rejection under 35 U.S.C. §103.

Independent claims 1, 3, 34 and 38 have been shown to be patentable over applied references. The dependent claims 2 - 8, 11 - 12, 35 - 41 and 44 set forth further inventive features and are also separately patentable over those references.

IV. Conclusion

The cited references teach away from the present invention by requiring at least one or more of the extra processing steps, such as: adding a nonpervious restraining layer heating materials in order to melt and flow into the holes; using a ribbed roller to force the resin through the fiberglass; or, heating along with applying a vacuum.

In view of the above amendments and remarks, Applicants have further shown that the invention, as defined in the pending claims, is neither disclosed nor suggested by the references of record. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objections and rejections of record, and allowance of all claims.